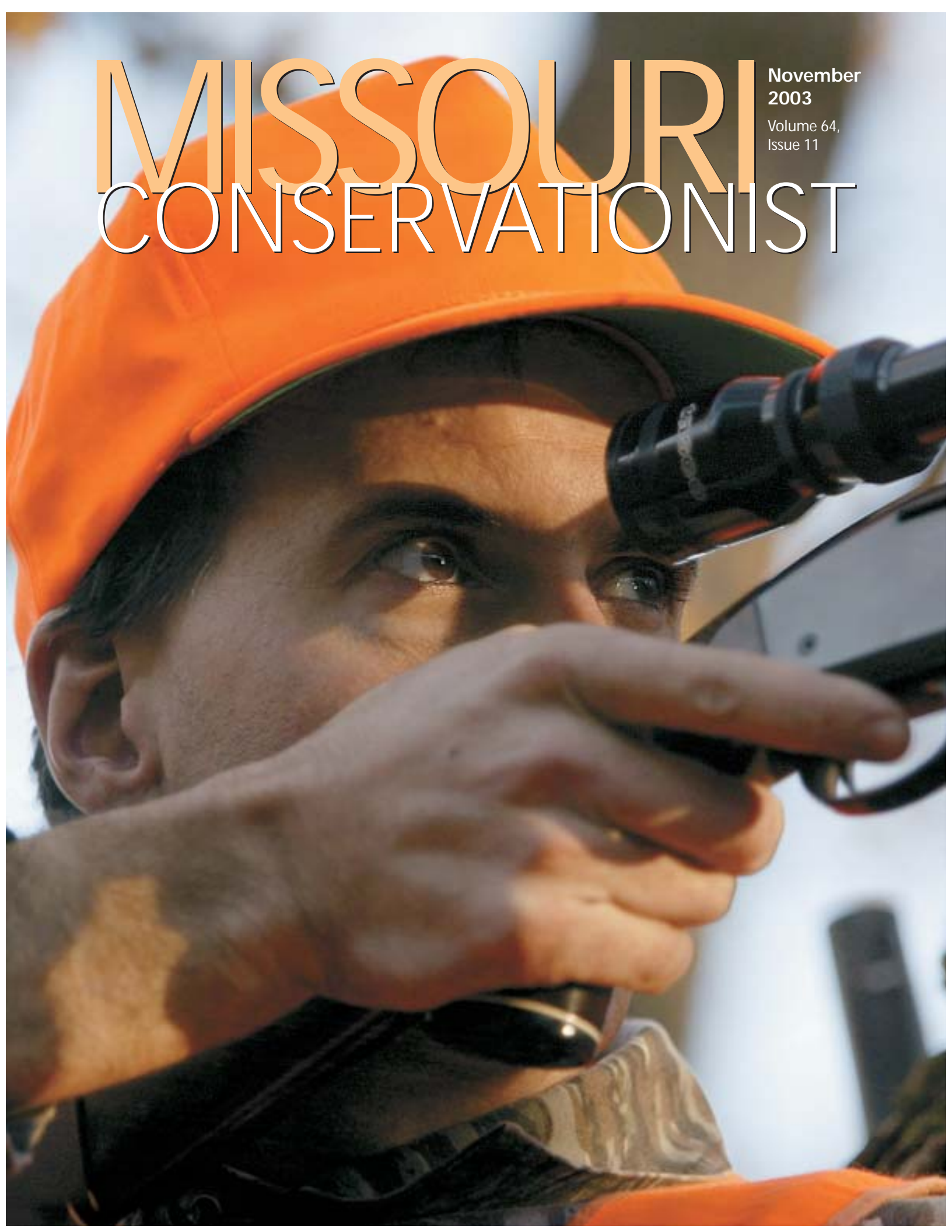


MISSOURI CONSERVATIONIST

November
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Code of Conduct

*The true meaning of life is to plant trees,
under whose shade you do not expect to sit.*
—Nelson Henderson

As a youngster growing up in the southeastern Ozarks of Missouri, I knew lots of people who liked to hunt and fish.

Most of those folks did their best to follow the hunting and fishing seasons and regulations, and they practiced an ethical code of conduct while afield. But there were a handful of poachers who didn't play by any rules. They hunted deer at night, giggered game fish, killed turkeys before the season, and didn't mind trespassing on neighborhood farms. They seemed to lack respect for others, and for the rules designed to conserve wildlife for everyone.

Conservation agents around the state still encounter folks with that kind of attitude. Fortunately those people represent a minority of a conservation agent's contacts.

Conservation agents are spread very thinly across the state, usually only one or two per county, and each is required to cover several hundred square miles. They cannot control wildlife violations without a lot of help and support from citizens, including a generally high level of voluntary compliance with the rules.

Hunting and fishing are often solitary activities. Aldo Leopold once said that a peculiar virtue in wildlife ethics is that the hunter (or angler) ordinarily has no gallery to applaud or disapprove of his conduct. Whatever his acts, they are dictated by his own conscience, rather than by a mob of onlookers. We hope and expect that hunters and anglers will adopt a personal code of behavior and have the self-discipline to police themselves.



I believe our attitudes and ethics are shaped at a very early age. Families and teachers with good values help youngsters develop a good personal code of conduct. Most people who hunt or fish relied on someone in their early years for ethical guidance.

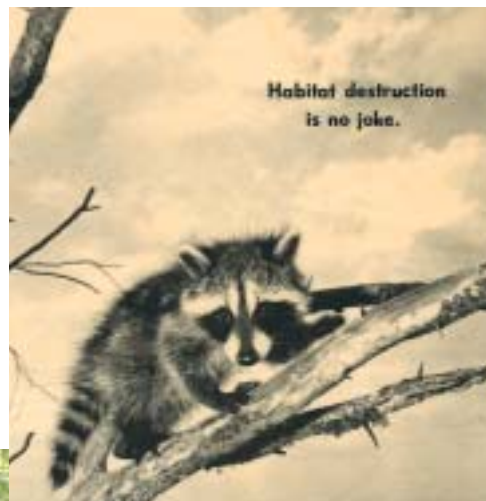
One deer season, I checked a vehicle that held several deer hunters. The driver seemed nervous. As I asked questions, a little boy in the back seat proudly pointed to his uncle and said "Uncle Dave got one!"

It turned out Uncle Dave, the driver, had killed a doe illegally and had stored the venison at a relative's house. I've often wondered if that little boy got in trouble later, for having told the truth. I prefer to think his uncle learned a valuable lesson from the experience and not only developed a better code of conduct for himself, he also became a better mentor for his nephew.

I recently attended a public meeting on conservation in Kansas City, where I heard Jim Hawes, a volunteer at Burr Oak Woods Nature Center, say, "We must educate children so they develop a personal respect for nature."

Jim said his love of nature began because he "had a creek" as a child, and someone to teach him about the out-of-doors. I think all children need a creek, and someone to teach them about it. They also need someone who can show them the right way to respect our wildlife, and the laws that govern hunters and anglers.

Dennis Steward, Protection Division Administrator



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CLEAN DEER TIPS

In the excellent article about cleaning deer in your September issue, Bryan Hendricks omits an important point.

One should always carry at least two knives. Immediately after tagging the deer, remove the "stink pads" from the back, lower legs with one knife and use the second knife for all remaining field dressing activities.

If this step is missed the meat tastes like a skunk smells and, in my opinion, is not worth eating.

Cheryl A Goddard, Union

I am a Missouri deer hunter and full time butcher. Last year alone we processed over 1,100 deer.

In the processing room when cutting beef, pork or sheep, there is very little blood on work surfaces. During deer season, after processing only a few deer the processing room looks like a slaughterhouse because of all the blood left in the carcasses.

The very first thing a hunter should do with any animal immediately after the kill, be it a deer, rabbit, turkey or fish is bleed it. In the industry, if I didn't bleed an animal it would be condemned and thrown away. Blood left in the carcass will taint the meat, causing it to look blood red, and enlarges the amount of meat affected by bruises and wounds. It's also the source of much of the "wild" taste in venison.

I would guess that more than 95 percent of hunters do not bleed their animals.

An entry or exit wound will most likely not properly bleed a deer. Gravity will bleed the animal after the arteries running between the heart and the cranial are severed. After an injury, some of the blood may also accumulate in the cavity, where it should be washed out promptly after gutting.

John S. Beck Jr., Independence

MOURNING NEWS

Your picture of the female mourning dove on the back cover of your September issue caught my attention. We recently had a pair of doves returning to our yard. My husband and I wondered if the birds were hurt, or if maybe they were going to lay eggs. As you pointed out, the babies are leaving the nest in late summer and were probably moving on.

Amber Ripple, O'Fallon

SPREADHEADS

I enjoyed your article about hognose snakes. In my part of the country, we called them "spread heads" or "spreading vipers." I have tried everything to get one to strike, and make contact, but I have always failed.

One difference between eastern and western hognoses is that the western's snout is more upturned. I found one in Knox County more than 50 years ago.

John W. Nicol, Knox City

NUTCRACKER

I was so excited when I read about the Clark's nutcracker in your maga-

zine. When my mother and I filled our bird feeder yesterday, we stayed to watch the birds eat. One bird was a Clark's nutcracker! I didn't think they would come around here, but at least one did.

Sara Lalk, Ware

FIRST AWARD

I just wanted to thank the Conservation Department for sponsoring the First Turkey/Deer Award program. My son, Zach, received his certificate in the mail today. What a wonderful way to preserve a young hunter's memory of his first successful hunt!

Being able to have his picture included on the certificate made it really special. I hope the program will still be available when the time comes for my youngest son to go on his first hunt with Dad.

Angie Regan, Columbia

MUSSEL MEMORY

After reading your article on mussels, my husband found a mussel shell along a drainage ditch that runs into the Missouri River.

The mussel looks like the Curtis' pearly mussel shell pictured in the article. It measures 8 1/4 inches by 6 inches, the largest shell I have ever seen.

Joe & Doris Samson, Malta Bend

WHATNOT

My nephew, who will be turning five, has fallen in love with your magazine. Since he was very small, my family and I would show him pictures in your magazine of deer, fish, bugs and what-not. He now knows the different kinds of fish, and insists that there are dogfish that go along with catfish. When we ride in the car, he constantly looks for deer.

I could go on and on about how your magazine has touched my family.

Lisa Capestro, Tipton

NO NEGATIVES

I greatly appreciate what you do for our state and support your efforts. My father-in-law is quite a negative person who finds fault with a lot of gov-



EYE OPENER

After a bulldozer had uncovered a black rat snake nest, the Reynolds family of Kingsville saved the eggs and watched them hatch, before letting them go back to the wild. "There were about a dozen eggs," Biz Reynolds said, "and the snakelets were beautiful."

ernment issues, but he is quite proud of the Conservation Department. He says several other states fashion themselves after us.

Douglas McKinney, Seneca

OSSIE & HARRIET

In "There's something fishy about these hawks," in your October issue, the writer omits telling your readers that the cellular transmission tower housing a family of ospreys just south of Jacksonville is a U.S. Cellular tower.

The nest was discovered in June by a tower construction contractor. U.S. Cellular dubbed the osprey babies "Ossie and Harriet," and engineers have made every effort to make sure the family of fishhawks remains undisturbed.

U.S. Cellular officials in June contacted Senior Conservation Agent Tom Skinner, who confirmed that the birds are at no risk from nesting in the 300-foot tower

The U.S. Cellular Central Missouri Team

The letters printed here reflect readers' opinions about the Conservationist and its contents. Space limitations prevent us from printing all letters, but we welcome signed comments from our readers. Letters may be edited for length and clarity.

Ask the Ombudsman

Q: Is it illegal to have venison in your freezer in September?

A: The August deadline for disposing of venison was rescinded several years ago because it was impractical to limit possession of deer meat when hunters could take multiple deer in a season.



The Conservation Department has a time limit on the possession of turkey meat, however. Here's what Chapter 4 of the *Wildlife Code* says: "Turkeys may be possessed or stored not later than February 15 next following the close of the season when taken."

If you harvest more venison than you can eat, you can donate meat through the Share the Harvest program. Contact

your nearest Conservation Department office for details, or see www.conserva-tion.state.mo.us/hunt/deer/share/.

Q: I've hunted in states which require you to have a hunting permit as well as a deer permit to hunt deer. What's needed in Missouri?

A: A deer permit is all you need to hunt deer, but if you want to hunt small game, then you'll also need a small game hunting permit. For details on permits, their costs and the privileges provided please see Chapter 5 of the *Wildlife Code*. See it online at www.sos.mo.gov/adrules/csr/current/3csr/3csr.asp.

For details on hunting other wildlife during the deer season, see the Fall Deer & Turkey Hunting Information booklet, available wherever permits are sold, or online at www.mdc.state.mo.us/hunt/deer/deertuk/.

Ombudsman Ken Drenon will respond to your questions, suggestions or complaints concerning Conservation Department programs. Write him at P.O. Box 180, Jefferson City, MO 65102-0180, call him at 573/751-4115, ext. 3848, or e-mail him at ken.drenon@mdc.state.mo.gov

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A Mandate to Save the Meramec

by Joe Bachant
photography by Jim Rathert

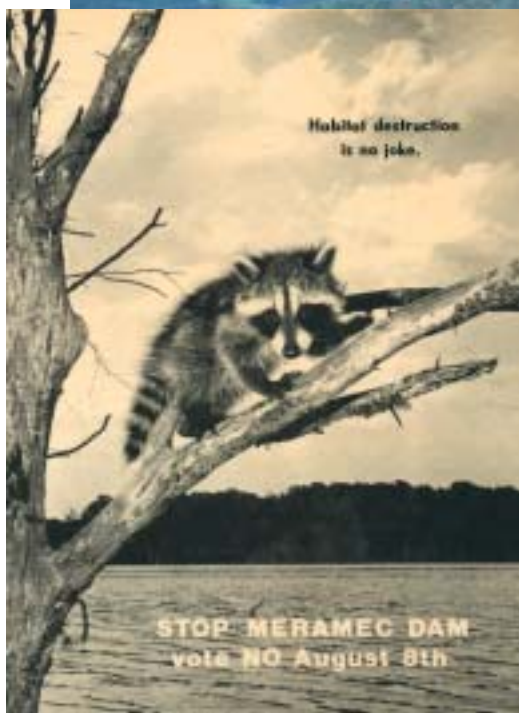
It was July 4, 1974, Independence Day, but the memory is as clear as though it happened yesterday. The prow of our canoe had hardly touched the gravel when my canoe partner jumped out, planted her feet solidly on the gravel bar, put her hands on her hips, turned to face me, and with trembling lips declared, "Daddy, you've got to do something!"



We almost lost one of Missouri's greatest treasures—
a free-flowing Meramec River.

This passionate mandate was issued by my young daughter, JJ. The scene was the end of a memorable family float trip on part of the Upper Meramec River, a river apparently doomed to be dammed by the U.S. Army Corps of Engineers. I was floating the river that day because the U.S. Fish and Wildlife Service and Missouri Department of Conservation had decided to "reinvestigate" the impacts of the proposed dam on this particular stretch of the river. I was the MDC employee assigned to assist with this effort.

As we meandered downstream, I pointed out proposed reservoir levels, as well as what would be lost. Lost bluffs, lost riffles, lost overhanging branches, lost gravel bars, lost places to seine for fish. We would be losing a river, a legacy and a way of life. These were changes JJ and Jeff could comprehend.



My son, Jeff, and JJ grew quieter as we pulled out at the site of the soon-to-be-constructed dam. Surveyors' ribbons festooned nearby trees. A cleared path ran perpendicular to the river up the bluffs on both sides, creating a scar marking where the centerline of the dam would be.

Sensing a loss too profound for words, my daughter turned to the adult in her life who was supposed to make everything better and defiantly demanded that I right this wrong. My mission on this project immediately took on a very personal bent.

JJ is now a grown woman with a remarkable conservation career of her own. I'm not sure she recalls that particular float trip or the challenge she hurled at me that day. She will never know the heaviness in my heart as we left the river. I knew that the beauty and soul-refreshing experience my family enjoyed on the Meramec that day was worth its weight in gold. Quantifying that experience into data meaningful to others was to be an all-consuming challenge for the next six years.

To the newest generation of conservation workers, it is worth noting that those were opportune years for professionals trying to protect our natural resources from detrimental environmental impacts. The passage of the National Environmental Policy Act (NEPA), the Endangered Species Act and other new laws addressed the concerns of the people. Our challenge was to figure out how to effectively use these tools.

Despite a national trend toward a more environmentally conscious society, the Missouri delegation in Congress in 1974 and the Army Corps of Engineers still supported

building the dam on the Meramec, as well as four more dams on other streams in the basin. Our daunting task under the new federal mandates was to educate federal decision makers of the merits or impacts of each individual project based on scientific evidence of cause-and-effect consequences to fish and wildlife.

Regarding the Meramec River, creating the proposed 23,000-acre flood control lake where one never existed before, and the resulting conversion of miles of free flowing Ozark streams to flat water, indicated there would be significant gains and losses.

Naturally, this issue spawned the question of whether the good outweighed the bad. People in the region that would be affected had to ask themselves what they really wanted.

Project advocates, who were primarily interested in advancing their cause, had ready answers to these questions.

NEPA, however, spawned deeper, more specific and more pointed questions. Furthermore, it demanded science-based answers to questions stemming from concern for the tradeoffs to both natural habitats and human society. In short, it changed the definitions of desirable and undesirable, as well as the definitions of good and bad.

As a young professional with Missouri Department of Conservation, I had the good fortune of working with the leaders in the emerging science of assessing environmental impacts to wildlife habitat. In the fall of 1974, we applied our tested methodologies to the affected habitats in the Upper Meramec Valley. Results confirmed that habitat losses would be substantial and devastating.

Hours of work culminated in a federal report published in March 1976 that told the whole story: The 34,000 acres directly affected by the project would destroy or degrade 109 miles of unique clear-water stream habitat, and more than 38,000 acres of valuable terrestrial habitat. Large numbers of caves and springs would be inundated.

Secondary adverse impacts would also result from induced development on about 125,000 acres surrounding the project, and on some 39,710 acres downstream.

These figures, and the 37 pages of text from the report, had a profound effect on the public, elected officials and both proponents and opponents alike. The intervening period between the issuance of the report and the 10-county referendum 39 months later were fraught with demands for justifications, threats, allegations of "fake science," and accolades or censor, depending on which side of the controversy you stood.

These objections to the dam did not by themselves stay the course of history. During this time, the political pendulum also was swinging against funding federal water projects. Many initiatives, including Meramec Park Lake, wound up on a Presidential "Hit List." They also lost congressional support. Local newspapers pushed for a definitive up or down public vote.

Swaying to public pressure in 1977, the Missouri General Assembly called for the 10-county referendum. In addition, private citizens from the Meramec Valley and elsewhere collaborated to develop an alternative plan that featured a free-flowing river. The tide was turning.

As the eve of the referendum approached, I sought solace by reading from notes by Mr. E. Sidney Stephens written in 1941. Mr. Stephens was the philosophical founding father of the Missouri Conservation Commission. He noted that, if given facts relating to the impacts to fish and wildlife associated with the 32 dams and reservoirs that were proposed at the time on Missouri's Ozark rivers, the people of Missouri could be trusted to make the right decision. The job of the Commission was to make those facts known.

Mr. Stephens likely never dreamed that 37 years later his words would prove prophetic. On the eve of the referendum, I prayed that we, whose jobs were to present the facts, had served the public well.

"Sensing a loss too profound for words, my daughter turned to the adult in her life who was supposed to make everything better and defiantly demanded that I right this wrong."

On August 8, 1978, a little more than four years after our family's memorable float trip, the people of Missouri from a 10-county area surrounding the Meramec resoundingly defeated the dam project in a public referendum by a vote of two to one. I believe Stephens was right. The facts had helped convince people not to accept known losses for uncertain gains.

Given such a public rebuke, the Meramec Park Lake project was deauthorized by Congress in 1981, ending, for the time being, more than 50 years of controversy. The people had spoken. There would be no dam on the river, and my children, their children and all future generations would have the opportunity to experience a wild, free-flowing Meramec River.

My family celebrated by taking a victory float. I wasn't able to accompany them because I was busy incorporating the will of the people into law. I was with them in spirit, however, and content with knowing that my little girl's wishes had come true.

Not much has changed in the intervening years. JJ is now dealing with a proposed federal dam in her own professional jurisdiction. Substantial disparity remains, and probably always will remain, over how water and rivers should be used.

The one thing that we have learned is that the public—the citizens of this great land—deeply value our wonderful rivers, forests, mountains, prairies and oceans. While the people, acting through their elected officials, may give us tools like NEPA to do our job, our work is not done until the people are informed and understand what is at stake, and what they stand to gain or lose. Only then can they make a wise decision.

What was gained for JJ and future generations more than 25 years ago is as temporal as a grain of sand on a gravel bar. With the next flood, public opinion can change.

I'm confident, however, that as long as people are willing to speak out and hold accountable the elected officials and agencies assigned to protect and preserve our national treasures, our rivers will remain free flowing.

"Daddy, you've got to do something!" has reverberated in my mind for more than 25 years. I am committed to bequeath that same mandate to others. ▲



Missouri's Conservation Heroes: Leo Drey

Building Natural Wealth

by Kathy Love

photography by Cliff White

Leo Drey's conservation legacy grows as he tends to his forests.

"I'm out planting a forest," says Leo Drey's answering machine. "Please leave your name and number, and I'll try to get back to you before it matures."

Leo Drey owns more land—160,000 acres in the Ozarks—than any other private landowner in Missouri. The answering machine in his downtown St. Louis office is his sole concession to modern technology. His old Underwood typewriter still stands ready for action. Ledgers written in his tiny, neat script record his land acquisitions back to 1951. They reside in an unlocked safe that looks like it was new during the California Gold Rush.

Drey purchased his first chunk of land from "Doc" Jim Buford of Reynolds County. He bought more than 1,400 acres for about four dollars per acre.

"Doc Buford was a real doctor, Drey said, "but he only had one patient his entire practice. He decided that was enough for him and took up cattle ranching. He once claimed that he walked through a log yard and spotted a tree that had come off his property. He said he went to check, and sure enough, it was gone."

Drey bought a lot of his land for back taxes. Most had been heavily logged. That suited Drey because he was committed to restoring a resource that had been virtually exhausted during the massive timber harvests in the early part of the 20th century. He also contacted potential land sellers throughout Reynolds, Carter and Shannon counties by mail. He occasionally visited with them in person, too, but with mixed results.

"I visited a fellow in his home once," Drey recalled. "He wasn't very talkative. I told him his land would have value if he could keep the cows off, but he just kept looking at the fire. I rambled on about cattle and so forth and finally got back around to asking if he'd sell his land. He never stopped looking at the fire, but he said, 'Best go out this door. I'll watch to see the dogs don't get you.'"

"I really respect the people of the Ozarks," Drey continued. "They managed to make a living from those hills through sheer hard work. They'd find a spring, clear some land, and be pretty self-sufficient with what they could grow and raise."

The most profound improvement in Ozarks land management occurred when open range was finally closed in the 1960s.

"That was a vast, vast change for Ozarks forests," Drey said. "Before that, cattle and hogs were turned loose in the woods to forage. People would burn your land to encourage grass for them. Spencer Jones, a local landowner, was a 'one-string guitar' who persisted and finally succeeded in getting the laws changed to overturn open range."

Attitudes changed, too, and people began to value the oaks, hickories and pines that grow on the steep slopes, dry ridges and deep hollows of the Ozarks.

"People take better care of their timber, now," Drey observed. "I compliment the Conservation Department for their forestry education efforts. It's had a major impact. People understand that timber is a crop, that it grows, and if you handle it right you can come back later and take another crop. Oh, you still find instances of arson and grudge fires, but nothing like it used to be."

A forest fire led to Drey's largest land acquisition. He owned about 37,000 acres in 1954 when he was called out to help fight a fire on public land. After working all night,



Records of more than a half century of forest acquisition and management resides in Drey's ledgers. Drey's 160,000-acre Pioneer Forest provides employment for about 70 people as foresters, woodcutters and sawmill hands.

he sat down to rest by Charlie Kirk, who was a forester for National Distillers, a company which owned and harvested vast amounts of white oak for making whiskey barrels.

Kirk said that National Distillers had directed him to "liquidate" (clear cut) the rest of the white oak on their 90,000 acres of land. After the fire was out, Drey immediately went to New York to make an offer for their land to prevent the clearing.

"I ended up buying it, and I've been in over my head ever since," Drey said.

The acquisition was the largest single land purchase for conservation in Missouri history. Drey hired professional



Leo Drey and his wife, Kay, are known for preserving outstanding natural areas. A cartoon (right) showing Drey appeared in the St. Louis Post-Dispatch as part of its recognition of Pioneer Forest's 50th birthday.

foresters to help. Lee Paulsell was the first, along with Charlie Kirk and present-day manager Clint Trammel. Trammel has managed the Pioneer Forest since 1978.

Drey's forest management philosophy is to harvest individual trees as they reach maturity and maximum value, and to remove trees that are defective. This "uneven-aged" management strategy contrasts with "even-aged" management, where all the trees in a given area are harvested at one time. The trees that replace them are all the same age.

Drey expanded a program called Continuous Forest Inventory begun by National Distillers in 1952. Pioneer Forest was divided into 498, one-fifth-acre study plots. Every five years the plots are monitored for tree vigor, growth, volume and quality. Trammel said that 50 years of continuous monitoring has yielded one of the nation's best databases on oak, hickory and pine forest management. It is often used by university research projects. It documents that selective harvest provides excellent regeneration and growth.

Trammel is also working on a program to encourage responsible forest stewardship while increasing the worth of wood. Called "Value Missouri," the program was begun by a group of private landowners, environmentalists and the wood industry to certify that lumber originated on lands that are managed for sustainable forest harvest. People are willing to pay more for such lumber, especially in specialty markets, said Trammel, and the program can pay real dividends to participating landowners. Programs like "Value Missouri" and the 50-year-old research project are two reasons Pioneer Forest is aptly named.

Drey's long tenure as a large landowner and his dedication to conservation continue to place him in the forefront of environmental issues.

"I'm close to being fought out, though," said the 85-year-old Drey, reflecting on battles won and lost. He was involved in the national "Wild and Scenic Riverways" designation of the Current and Jack's Fork rivers in the early 1960s. He advocated that private landowners along the river be allowed to keep their property while receiving scenic easements to protect the rivers from development. Instead, Congress passed legislation that led to condemning the property through eminent domain, creating resentment that still persists.

Drey also organized the Open Space Council of St. Louis. One of its first challenges was to sponsor a bond issue for parks. The measure lost by just 300 votes out of 76,000.

"We licked our wounds and concluded that a broader base of support was needed to address the many environmental needs of the urban area," recalled Drey.

That campaign was the genesis of Coalition for the Environment, the state's first independent citizens' group to address a broad range of environmental issues.

"We were gratified later that St. Louis County was able to acquire some property the bond issue might have funded, and one purchase became one of my wife's favorite areas – Queeny Park," Drey added.

Kay Drey helps Leo tackle environmental issues. He met and married her rather late in life for those times. His mother had worried that Leo's early preoccupation with buying forest land might never lead him to marriage.

When he first took his mother to the Ozarks to view his property, Drey proudly showed off his land and forests. At one point, he embraced a tree to show her its girth. She responded, "That's about the saddest sight I've ever seen."

Before he could marry Kay, he had to put her to the canoeing test. "I was a canoer in the Ozarks long before I



was a landowner,” Drey said. She passed the test on the Upper Jack’s Fork admirably, and the family, which came to include three children, spent many satisfying nights on gravel bars camping under the stars.

His most widely publicized purchase was Greer Spring in Oregon County in 1988. Greer is the second largest spring in Missouri, and its owners saw the potential for commercial development. They received an offer from a large corporation for an amount that couldn’t be matched by the state or federal government, both of which were interested in protecting it. Drey stepped in with an offer the landowner accepted, then turned it over to the U.S. Forest Service at a bargain basement price.

Drey also purchased and protected the state’s highest waterfall (Hickory Canyon Natural Area in Ste. Genevieve County) and the state’s best example of old growth white oaks (Current River Natural Area in Shannon County), not to mention shut-ins, caves, canyons and many other one-of-a-kind natural areas.

The late John Wylie, a Conservation Department natural history chief, once said of Leo Drey, “Yes, there is a Santa Claus for natural areas in Missouri. Every now and then, Santa, in the form of Leo Drey, reaches deep into his bag of goodies and pulls out another jewel to present to the people of Missouri.”

What will happen to these natural jewels when Leo Drey is gone? They will continue to be protected by the L-A-D Foundation. That stands for Leo A. Drey, and it was formed to care for the property in perpetuity. Its board is made up of a cross-section of dedicated conservationists who share Drey’s views on the state’s natural riches and their care.

For a state so rich in natural treasures, Missouri is richer still for having a real life Santa Claus. His name is Leo Drey. ▲

Missouri Natural Areas

Leo Drey contributed to Missouri’s outdoor wealth by acquiring outstanding natural features for inclusion in the Missouri Natural Areas system. For a complete list of natural areas, go to:

www.conservation.state.mo.us/areas/natareas/



Visit Pioneer Forest

Leo Drey established the 160,000-acre Pioneer Forest to demonstrate that Ozarks forests could produce a continuous supply of timber products and still maintain a broad range of environmental values, including wildlife, recreation, water quality and aesthetics.

The Virgin Pine Walk and Pioneer Forest Interpretive Drive are good ways to view the forest and its management techniques. They are located 25 miles south of Salem (one mile south of Round Spring) on Highway 19. Brochures are available on site to guide your tour.

The Roger Pryor Pioneer BackCountry will also soon be available for hikers and backpackers. This remote, 61,000-acre area in Shannon and Reynolds counties will provide trails and primitive camping areas in natural surroundings. Hunting and fishing are also permitted throughout Pioneer Forest.

To learn more about Pioneer Forest, visit its web page at www.pioneerforest.com.

Why Food




Wildlife won't visit
your food plots
unless you maintain
good habitat nearby.

by David Hoover photography by Cliff White

It's opening morning of quail season. Your dogs are raring to go, and you can't wait to get started. Your anticipation increases as the sun peeks over the horizon, welcoming the new day. After all, you believe you are about to reap the benefits of the six food plots you planted on your property.

Plots Fail





By midday, you have walked for what seems like an eternity, from one end of the property to the other and back again, and with nothing to show for it beyond a good workout.


As you roundup the dogs and walk back to your vehicle, you contemplate what went wrong. Maybe your food plots aren't big enough or contain the wrong seed mixture. Maybe the birds haven't found them yet. It could be those darn predators. All are possible explanations for the lack of quail on your property, but there might be something else at work. It may be food plots by themselves are not guaranteed to attract quail.

Since the beginning of modern wildlife management, food plots have been considered an important and beneficial wildlife management practice. Food plots provide wildlife with a high-energy food source during winter weather and an abundance of insects for newly hatched quail chicks. Over the years, however, food plots have developed a reputation as a panacea for wildlife habitat management, to the point that people use them without considering other needs of wildlife..

Food plots are best viewed as something that can make good habitat better. They do not automatically translate to more wildlife regardless of the condition of the surrounding habitat. Embarking on a food plot management program without first considering the species being managed for and the surrounding habitat conditions can be costly and frustrating.

All wildlife require food, suitable cover and water. Simply providing these basic habitat components may not be enough, however. Their arrangement and availability must be taken into account as well. This is especially true for bobwhite quail, one of the most popular wildlife species in Missouri.

Bobwhite quail populations continue to decline across their range, but study after study confirms that where there is suitable habitat in large enough blocks,



Providing food (left) satisfies only one of wildlife's critical needs. Make your food plots more attractive to wildlife by ensuring that cover and nesting or resting areas (above) are nearby.

quail populations are stable. Certainly, severe winter weather, excessively wet springs or extended summer droughts can cause quail numbers to fluctuate, but over the long-term, populations will be self-sustaining. The key to having and maintaining good quail numbers is an abundance of quality habitat.

Quail have very specific habitat requirements. They must have nesting, feeding, loafing, roosting, dusting and escape cover close together. Nesting cover consists of introduced cool-season grasses, such as timothy and orchard grass, and native warm-season grasses, such as little bluestem, big bluestem and switchgrass. Nesting cover must have an accumulation of dead grass from the previous growing season. It must be open at ground level to allow free movement by adults and newly hatched chicks, and it must provide overhead protection from predators.

Bobwhite quail are not strong scratchers and cannot reach food that is buried in the soil or in heavy accumulation of litter. The first eight weeks of a young quail's life are critically important. Quail chicks must have access to cover with little residual vegetation, an abundance of bare ground—between 25 and 50 percent—and a canopy dominated by broad-leaved plants. Such cover provides an abundance of insects for brood rearing during the summer months, and weed seeds for fall and winter feeding. Because quality feeding areas have high levels of bare ground and overhead protection, they also serve as ideal places for dusting and roosting.

Escape cover consists of dense woody cover from ground level to a height of about 10 feet, yet is open enough to allow quail to move freely underneath. Quality escape cover is the foundation of the “covey headquarters.” These areas are occupied during midday for loafing

and dusting, and for protection and roosting during severe weather.

Property without well distributed escape cover will harbor few if any quail. Thick hedgerows, brushy draws, plum thickets and blackberry patches are examples of quality escape cover.

“The key to having and maintaining good quail numbers is an abundance of quality habitat.”

Across the bobwhite's range, food is not a major limiting factor except, possibly, during times of extreme winter weather in northern portions of their range. Studies have shown, however, that quail near food plots have higher body fat content than quail far from food plots. Although quail existed for eons without food plots containing corn, soybeans and milo, it's likely that well placed food plots may promote better body condition in spring and improve reproductive success if there is good roosting and nesting cover nearby.

To realize all the potential advantages yielded by food plots, you have to have other critical habitat components present. Quail populations can remain stable, and even increase, given favorable weather conditions when quality habitat and an abundant native food supply are available. Also, quality habitat over a large enough area can reduce a quail population's susceptibility to weather, disease, and predation.

Management efforts that focus more on food plots than on first providing the critical habitat components of nesting, feeding, loafing and escape cover will likely yield less-than-desirable results. Food plots are best viewed as an insurance policy, guarding

against infrequent and uncontrollable events such as severe winter weather.

Certainly, food plots have their place in wildlife management. For instance, annual grain food plots, by providing bare ground and high insect populations, could serve as brood-rearing cover, as well as a high-energy, late-winter food source, in areas already having suitable escape and nesting cover.

The basic management principles described here for quail can be applied to other wildlife species, including deer and turkey. It's best to tailor your management efforts to the habitats most used by a particular species or group of species. For instance, improving habitat structure in and around an 80-acre woodland will yield greater long-term benefits for deer and turkey than planting a 3-acre food plot. Combining both of these practices, however, could yield results greater than either of the practices alone.

Property owners can attract and hold more quail by creating quality escape cover along woodland borders adjacent to food plots. This might include shrub plantings. They might also improve the grassland cover surrounding their food plots. This could be done by reseeding with a wildlife-friendly grass-legume mixture, prescribed burning, strip disking and moderate grazing.

The next time you contemplate what food plot mixture to plant and where, ask yourself, “Is there something else that wildlife may lack?” If the answer is yes, then perhaps you should direct your management efforts toward improving habitat. Then your food plots will have the best chance of attracting wildlife.

For assistance in developing a management plan for your property, contact your local Department of Conservation or Natural Resources Conservation Service office. ▲

Foods high in usable energy for quail

Insects Ragweed Corn Grain sorghum Soybean Sunflowers Dogwoods



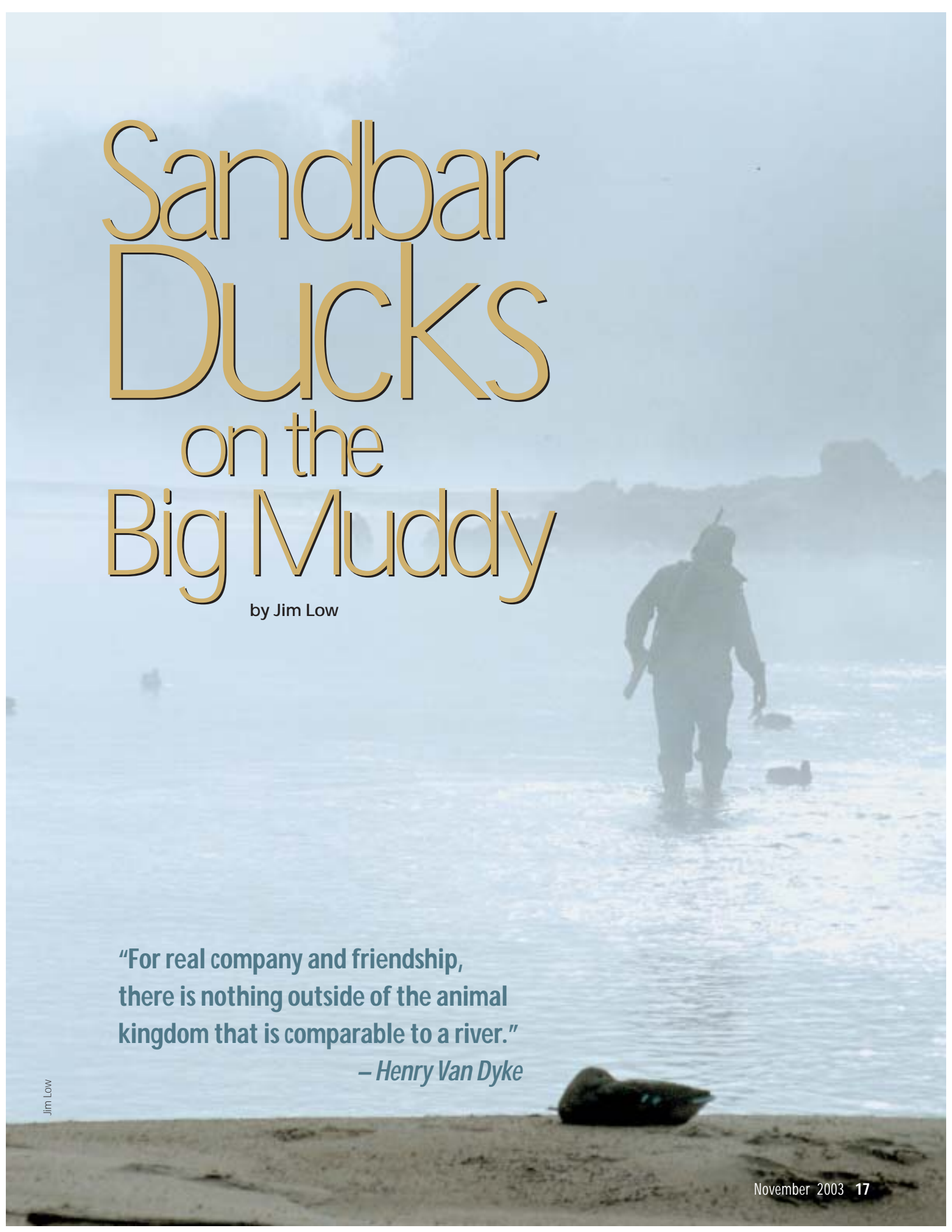
Jim Rathert

Quail-friendly management practices

Practice	Suitable Areas	Habitat Provided	Timing
Prescribed burning	CRP lands, idle fields, pastures, small woodlands (40 acres or less) near nesting and brood-rearing cover	Feeding, nesting following year, stimulates beneficial grasses/forbs	Fall/spring - depends upon vegetation being burned
Strip Disking	CRP acres, idle fields	Feeding, roosting, and fall/winter foods	Fall/late winter
Edge Feathering	Woodland borders near nesting and brood-rearing cover	Escape cover and fall/winter food	Fall/winter
Shrub Planting	CRP lands, woodland borders, crop field borders.	Escape cover and travel lanes	Spring
Native Grass/Forb Establishment	CRP seedings, rotational grazing systems, field borders, buffers	Nesting, roosting, and feeding	Spring/late fall
Timber Stand Improvement (TSI)	Small woodlands (40 acres or less) near nesting and brood-rearing cover	Escape cover, fall foods (acorns)	Late fall/winter
Interseeding Forbs/legumes	CRP lands, pastures, hay fields, idle fields	Feeding and fall foods	Fall/spring
Field Borders and Buffers	Crop fields and hay fields adjacent to escape cover	Nesting, roosting, feeding, and travel lanes	Spring/fall – depends upon vegetation being seeded
Grazing	Native grass paddocks in rotational grazing system	Nesting, feeding in some instances	Summer. Short duration – high intensity grazing best
Food Plots	CRP fields and open areas adjacent to escape and nesting cover	Feeding, late-winter food	Spring – grain plantings best

Quail-friendly plants

Perennial Grasses*: Little bluestem Sideoats grama Big bluestem Switchgrass Indiangrass Timothy Orchard grass	Cover Type Provided Nesting, roosting Nesting, roosting Nesting, roosting Nesting, roosting Nesting, roosting Nesting, roosting Nesting, roosting	Naturally Occurring Forbs/Legumes: Crotons Partridge pea Goldenrods Fleabanes Sunflowers Wild beans	Cover Type Provided Feeding – fall Feeding – late-winter food Nesting, roosting Nesting, roosting Feeding - fall/winter food Feeding – fall
Annual Grasses: Foxtails Panic Grasses Crabgrass	Cover Type Provided Nesting, feeding, roosting Nesting, feeding, roosting Feeding	Shrubs: Blackberry/black raspberry American plum American hazelnut Rough-leaved dogwood (north) Flowering dogwood (south) Fragrant sumac Smooth sumac Common elderberry	Cover Type Provided Escape, loafing, feeding – summer Escape, loafing Escape, loafing Escape, loafing, feeding – fall Escape, loafing, feeding – fall Escape, loafing, feeding – fall Escape, feeding - late-winter Escape, loafing, feeding - fall
Naturally Occurring Forbs/Legumes: Ragweeds Lespedezas** Beggar-ticks Tick-trefoils	Cover Type Provided Feeding – fall and winter Feeding – fall and winter Feeding – fall Feeding – fall	* Can provide feeding cover if mixed with forbs and legumes ** Sericea Lespedeza is an introduced invasive plant. Do not plant.	

A person in a wetsuit is wading in shallow water, likely a river or estuary. Several ducks are visible in the water and on the sandy shore in the foreground. The background shows a hazy, distant shoreline with some rocky outcrops.

Sandbar Ducks on the Big Muddy

by Jim Low

**"For real company and friendship,
there is nothing outside of the animal
kingdom that is comparable to a river."**

— Henry Van Dyke



Jim Low

It's two minutes 'til dawn. The temperature is a little over 40 degrees, and an impatient north wind is kicking sand into the shallow pit where I huddle with Guinness, my golden retriever. The pleasantly musty smell of her damp fur stirs memories of other hunts.

A few feet to my right, soft snores indicate that my hunting partner, John, who has no dog to keep him warm, has escaped the cold in the folds of Morpheus' cloak.

My gaze drifts left, where a slight rosy glow promises sun and warmth. I am lost in memories of other mornings when squadrons of low-flying ducks suddenly swoop low over the decoys, their wings rending the silence with an airy roar. I catch the barest glimpse of handsome black and white markings before they are gone behind me.

"Ringnecks," John observes, instantly awake. Guinness' swiveling head tells me the birds are circling out across the Missouri River's main channel, preparing for another pass.

John blows encouraging quacks on his call as four small, speedy ducks come back into view. I contribute contented feeding chuckles.

Skimming low over the roiling water, the quartet of divers seems determined to light. When they reverse their wing beats and throw out their feet, we throw back our tarps. Two shots dump two drakes. The remaining birds flair wildly and are out of range almost before their mates hit the water. Guinness is in retriever heaven, splashing madly toward the ducks as they drift slowly down the river slough.

Duck hunting on the Missouri River is unpredictable. It shifts with the river's moods, sometimes fast and challenging, other times slow and contemplative. But it's never dull.

River duck hunting is more work than dabbling in flooded cornfields, but the rewards are worth the trouble. For one thing, you need no reservations. Instead of standing in cramped rooms with other hunters to draw lots for hunting spots, you can survey your decoy spread without another hunting party in sight or hearing.

River hunting really comes into its own when ice locks up shallow wetlands. Then, ducks seek open water in river sloughs and side channels. I have seen river backwaters teeming with late-migrating mallards weeks after waterfowl refuges stood empty and silent. I'll never forget the haunting calls of a thousand snow geese descending through moonlit fog to land around me on a mile-long sand island.

River duck hunting, more than any other pursuit, puts you in touch with the awe that early explorers felt as they headed into this wildlife treasure trove.

Where to go

Some of the best places to hunt ducks on the Missouri River are adjacent to public wetland areas. The stretches of river near Lower Hamburg Bend (Atchison County), Bob Brown (Holt County), Grand Pass (Saline County) and Eagle Bluffs (Boone County) conservation areas all fit the bill. Howell Island Conservation Area (St. Charles County) also is good. When wetland development is complete at Columbia Bottom Conservation Area (St. Louis County) next year, this area will be a waterfowl magnet for river duck hunters.

Instead of trying to get ducks to come where you want them, it makes sense to hunt where ducks naturally want to be. You can discover these areas by drifting a stretch of river and scanning areas off the main channel with binoculars.

Side channels are good prospects. So are the head and tail ends of islands. When scouting, take time to explore islands, mud flats and low banks behind wing dikes, even if you don't see birds there. Droppings deposited in such areas prove that Canada geese are feeding and resting there. Ducks often loaf in these sheltered areas, too.

How to set up

Choose a spot where you can set your decoys within shooting distance of land. It's a good idea to place a few decoys at the water's edge and a foot or two on shore to give the impression of safety.

Wind direction is critical. Unlike flat, open wetlands, the river has features that can be obstacles to approaching ducks. Bluffs and tree-lined banks downwind of your decoy spread make landing hard and can prompt ducks to go elsewhere. When the river is very low, even an exposed wing dike can ruin an otherwise promising hunting spot.

A lack of natural cover on a sandbar, makes it difficult for hunters to escape the sharp eyes of flying ducks. You can build effective blinds from driftwood (below), or with material such as burlap, canvas, netting or other dull colored cloth (facing page).



Cliff White



Jim Low

Build a pit hide to hunt ducks on sandbars. Dig a shallow pit long enough for you to lie flush with the ground. Cover yourself with some sort of cloth, and then break the blind's outline with pieces of driftwood. When ducks come into range, rise into a shooting position.

Once you find a workable location, your biggest problem is concealment. Natural vegetation may provide partial cover along river banks, allowing you to simply cover yourself with a camouflage tarp. The jumbled surface of wing dikes can provide concealment, too. Most times, however, you have to create a "hide" of some kind. The challenge is greatest on flat, featureless sandbars.

If logs and driftwood are available, you can arrange them to form an impromptu hide that breaks up your body's silhouette. A tarp or burlap sheet arranged over a framework of driftwood stuck in the sand works, too.

One very effective approach is the pit hide. This consists of a grave-like depression just deep enough to put your nose and toes below ground level. A small shovel and rake are indispensable for this project.

After digging the pit, arrange pieces of driftwood across the opening and lay a tarp across them. Cover the bot-

tom and side edges of the tarp with sand. A few pieces of driftwood across the tarp will also help disguise your hide. Then use the rake to spread out any piled-up sand and erase your footprints and slip under the tarp to wait for your quarry.

Pit hides can be surprisingly comfortable. They offer shelter from wind and rain, and a closed-cell foam ground pad keeps your backside warm and dry. You'll have to resist the temptation to snooze.

When choosing tarps for camouflage, remember that driftwood, sand, and rock rip-rap are much lighter-colored than most marsh camouflage patterns. Plain burlap and old, faded tarps are better choices. Faded tan or brown coveralls blend well with river sand.

If you wear bifocal eyeglasses, leave them at home and wear single-vision lenses when hunting from a pit hide. Lying flat on your back forces you to look through the bottom half of the lenses. It's maddening to try to focus on incoming ducks through lenses made for looking at objects two feet away.

Unless you are hunting from your boat, anchor it as far as practical from your blind. Prop logs and sticks at random angles around the outside of the craft, then drape tarps on top to break up the boat's straight lines.

What you need

The most important piece of equipment for river duck hunting is a river-worthy boat. A sturdy river johnboat at least 16 feet long, with a large enough



motor to push you upstream is advisable. Smaller craft may be adequate for short trips in good weather.

If you must motor the river in the pre-dawn darkness, bring a spotlight to help you navigate. Dense fog is common. Allow plenty of time to reach your hunting spot so you aren't tempted to go faster than is safe.

River sand can damage fine guns or cause them to jam. Field-worn but serviceable double-barrels purchased for modest prices are ideal.

Pack extra fuel, clothing, food, hot beverages and a propane heater in case you get wet and need to warm up. Cell phones don't always work on the river, so tell a friend where you are going and when you expect to return. ▲

Waterfowl loads

Waterfowl hunters must use federally approved, non-toxic shot. Steel shot is the most popular and least expensive option. If used with a proper load/choke/shot size combination, it's very effective at ranges of up to 40 yards.

Other non-toxic shot options are bismuth-tin, tungsten-iron, tungsten-polymer and tungsten matrix. These loads, which are available at most major retailers and firearms dealerships, are heavier and more dense than steel, which increases their stopping power within reasonable ranges.

For shooting ducks at close range over decoys, use No. 1 or No. 2 shot from a 12-gauge shotgun and an improved cylinder choke. For pass shooting, use a modified choke.

Bryan Hendricks

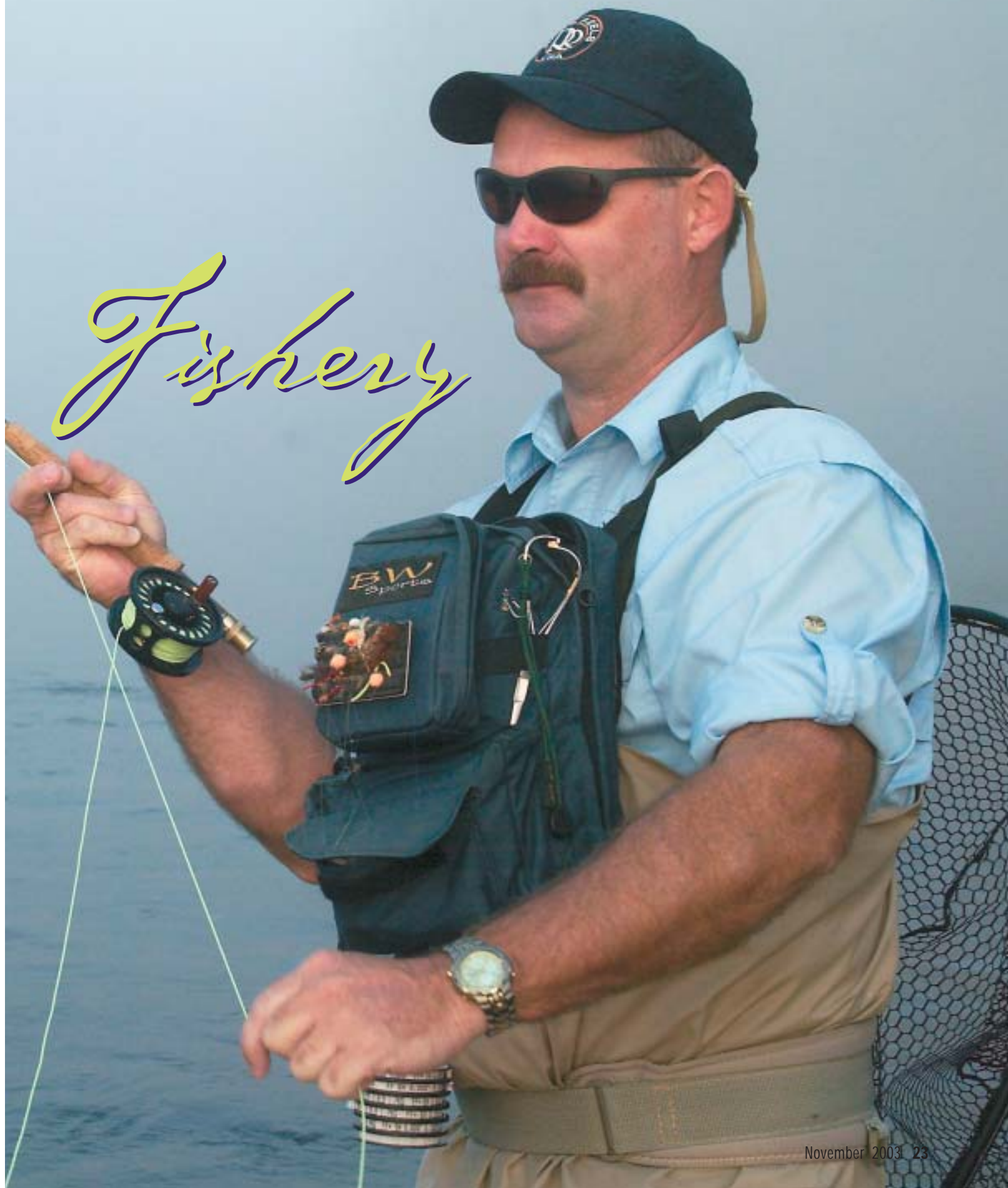
Missouri's Brown Trout

by Kenneth L. Kieser photography by Cliff White

Little “browns,” raised at Shepherd of the Hills Hatchery grow into behemoths in Missouri’s cold water streams.



Fishery





Lake Taneycomo is a spooky place at night. Nightly blankets of fog create thick shadows and swirls that would make a Hollywood special effects artist envious. Quiet settles over certain sections of this narrow lake after sunset, creating a ghostly arena for monsters.

Phil Lilley of Branson and I were hunting for these “monsters” as we slipped through the darkness armed with flyrods tipped with black woolly buggers. My glow-in-the-dark watch read midnight, the witching hour. Even without current surging through the generators at Table Rock Dam, navigating the shallow riffles and shoals was treacherous, requiring us to choose our steps very carefully. A misplaced foot meant a cold bath.

When we finally reached our spot, we fed out line into the void. Darkness mixed with fog made our eyes useless. To keep from spooking trout from this black hole, we only used a tiny light to change flies.

I was fumbling with tangled line when Lilley set his hook into one of the monsters. His opponent immediately started a series of deep lunges, sweeping from side to side with relentless force and determination, like a bull trying to throw a cowboy. Occasionally we heard dull, hollow splashes resounding through the darkness as the monster broke the surface.

Soon Lilley won the fight and gently hand-landed a 14-inch brown trout. I carefully stepped over, turned on my light and savored my first look at a Missouri brown trout. Golden yellow hues and black spots twinkled in the flashlight beam like jewels under a lit

glass counter. Lilley gently unhooked his beauty and let it slip back to dark depths for a period of sulking.

We caught several rainbow trout that night without hooking another brown. Lilley's 14-incher was remarkably small compared to what we sought. After all, Taneycomo is one of America's premier brown trout trophy lakes. The state record, caught in Bull Shoals Lake, just below Lake Taneycomo's Powersite Dam on November 10, 1997, by Rob Caudel of Springfield, weighed 26 pounds, 13 ounces.

Missouri Department of Conservation fisheries biologists and experienced brown trout anglers know that bigger browns exist in Taneycomo. During a sampling expedition, MDC staff captured and quickly released a male brown trout that weighed about 37 pounds. Brown trout obviously thrive in Taneycomo, but where do they come from?

"Brown trout are not native to Missouri," said Chris Vitello, a fisheries management biologist for the Conservation Department. He said programs to establish fishing opportunities for this brown trout date back more than a century. Fry were first reared in the Neosho National Federal Fish hatchery in 1890. This program stocked southwest Missouri rivers until 1936, but was discontinued because rainbow trout offered anglers more opportunities for less expense.

Before Table Rock Dam was completed in 1958, Lake Taneycomo was managed for warm water fishing. Crappie comprised 48 percent of the catch. Table Rock Dam funnels cold water to Taneycomo through hydroelectric turbines from depths of 140 feet. This water maintains a constant temperature in the 50-degree range, which is too cold for most fish species except trout. To offset the loss of the native warm-water fishery, the Missouri Conservation Commission



The growing interest in Missouri brown trout prompted fisheries biologists to find ways of producing more and better fish.

Shepherd of the Hills Fish Hatchery specializes in producing brown trout for Lake Taneycomo (top). Department of Conservation personnel facilitate hatching thousands of trout using eggs and milt from adult spawning fish "borrowed" from Lake Taneycomo. The fish are fed high protein food until they are big enough to release into the lake.



Brown trout hatchlings smaller than a fingernail could eventually grow to more than 40 pounds, the current world record. Missouri's state record brown trout weighed 26 pounds, 13 ounces and was caught at Lake Taneycomo.



authorized the construction of the Shepherd of the Hills Hatchery in 1958 to provide trout for Taneycomo.

"The Shepherd of the Hills hatchery was built in 1958 as a 200,000-pound trout production facility," said James Civiello, Shepherd of the Hills Hatchery manager for the Conservation Department. He said the hatchery area covered 301 acres and cost the Department \$201,581 to construct. This project came with a very reliable water supply, and brown trout were raised in single-pass, earthen raceways.

A need for more trout for stocking prompted a 1975 renovation of the facility. The new design, which included re-circulating concrete raceways, enabled the hatchery to produce 400,000 pounds of trout annually.

The renovation was funded through federal and state allowances. About 75 percent came from funding provided by the Dingell-Johnson Act, which is better known as the Sport Fish Restoration Act. The remainder came from the sale of hunting and fishing licenses. The Sport Fish Restoration Act is funded by a 10 percent excise tax on fishing equipment. An amendment to this law, known as the Wallop-Breaux Act, extends the excise tax to

marine fuel. Together, they have been instrumental in mitigating the loss of native fisheries and improving fish habitat throughout Missouri.

The Missouri Department of Conservation introduced brown trout experimentally in the Current River and North Fork of the White River in 1966. MDC fisheries biologists wanted to know if browns could reach trophy sizes in the fishing-pressured areas of Missouri's trout streams. However, most were caught and removed before reaching their growth potential, highlighting the need for special management of trophy areas.

The first trophy brown trout fisheries in Missouri's Meramec River were established in 1973. Anglers in these zones were allowed to keep three browns per day, with a minimum length limit of 16 inches. By 1977, anglers and conservation agents requested similar regulations for brown trout in the Current River and the North Fork of the White River. In 1978, the MDC Fisheries Division effected a 15-inch minimum length limit for all three special management areas.

Missouri's trout management areas now are located on sections of the Current River, Meramec River, Roaring

River, Bennett Spring and the Niangua River, North Fork of the White River, Roubidoux Creek and Capps Creek (Newton County.) The Eleven Point River may eventually be stocked.

"The growing interest in Missouri brown trout prompted fishery biologists to find ways of producing more and better fish," Vitello said. Brown trout don't reproduce in the wild in Missouri, so fisheries biologists began searching for the best strain of brown trout to raise in the Shepherd of the Hills Hatchery. They primarily experimented with the "Plymouth Rock" and "Sheep Creek" strains of brown trout.

"The Plymouth Rock strain is a semi-domesticated brown trout used extensively in the east and in California in put-and-take fisheries where harvest is of primary importance," Civiello said. "The Sheep Creek brown trout strain originated from a wild migratory stock spawning in Sheep Creek, a tributary of Flaming Gorge Reservoir in Northern Utah."

The Sheep Creek strain soon won out over the Plymouth Rock strain because it adapted better to Missouri streams and hatchery settings. It also exhibited better post stocking survival. The Plymouth Rock strain was simply

too domesticated, or not as tough. The Sheep Creek version also converts fish food to fish flesh quicker, making it more economical.

Anglers occasionally complain that Missouri's brown trout are difficult to catch. Department personnel considers this a positive comment because the Sheep Creek strain has maintained its wild integrity, even if it is somewhat challenging to raise.

By 1981, the Department began stocking the Sheep Creek strain in Lake Taneycomo at a rate of 50,000, 10-inch browns annually. Brood stock was difficult to hold in the hatchery setting because of their genetically wild disposition. After several years of stocking the Sheep Creek strain in Taneycomo, MDC personnel were able to capture enough fish from the lake for eggs and milt, allowing them to phase out a standing population of brood fish in the hatchery.

The Sheep Creek strain's spawning season occurs during October and November. Hatchery staff collect adult fish from the lake until they obtain 200 ripe females and 100 males. Eggs are removed from females with an air spawning method, which involves pumping oxygen into the body cavity of each fish to push eggs out. Eggs are then fertilized, and all fish are returned to the lake.

The egg incubation period lasts 45 days. After hatching, the fish eat a commercially produced dry food. To reduce stress on the skittish Sheep Creek strain fish, they are covered and fed automatically.

"Another challenge in raising the wilder Sheep Creek strain is disease," Civiello said.

Bacterial Kidney Disease (BKD) is a chronic to acute systemic infection of salmonid fishes. This disease rarely causes problems in fish smaller than six inches in length. However, under certain conditions it can cause high mor-

talities. The disease can be identified by a welt or blister on the side of the fish.

Civiello considers this disease unusual because it can be transmitted from mother to youth through the egg. Of all freshwater trout, brook trout are affected most severely, followed by browns. Rainbows are least affected. BKD can kill a lot of trout in a very short time if not quickly discovered and treated.

Shepherd of the Hills Hatchery staff constantly monitor their fish for BKD. Even so, the hatchery once lost several thousand fish before an outbreak of the disease could be brought under control with antibiotics. Stress, overcrowding and water quality are contributing factors of BKD outbreaks.

Trout fishing in Missouri adds up in dollars and cents. For example, the Taneycomo fishery has an estimated combined annual economic benefit of about \$13.5 million. The hatchery not only raises more than 50,000 brown trout annually, it also raises and releases 750,000 rainbow trout annually into Lake Taneycomo and other trout streams and rivers. The hatchery sup-

plies an additional 60,000 to 100,000 9- to 10-inch rainbow trout to Roaring River hatchery annually. About 3 million trout eggs and 125,000, 3-inch, fingerling trout are transferred to other state hatcheries in Missouri.

The hatchery itself is also a popular tourist attraction. An estimated 250,000 people visit the Shepherd of the Hills Hatchery annually.

"Guests are amazed at how many fish we have on station at the Shepherd of the Hills Hatchery," Civiello said.

A 1988 survey of hatchery visitors indicated that most were non-Missouri families vacationing in the Branson area. Visitors can view exhibits and videos, see fish in aquariums and watch the hatchery fish being fed.

Time, hard work and conservation dollars have developed a world class brown trout fishery in Missouri. Thanks to the production of the Shepherd of the Hills Hatchery, every cast in our state's trout waters brings the possibility of a thrilling battle with a bruiser-size brown trout. Who knows? It might even be a new Missouri state-record. ▲



NEWS & ALMANAC

BY JIM LOW

Callaway County cougar was probably wild

A mountain lion killed by a motorist south of Fulton Aug. 11 showed no signs of having been kept in captivity. It's the seventh confirmed mountain lion sighting in Missouri since 1994.

The 105-pound male cat still had the black markings of a cub, leading experts to estimate its age at 12 to 18 months. Young male cougars normally leave the area where they were born to establish their own territories.

Tissue samples have been sent to a lab for DNA testing in hopes of determining the cougar's origin. Ticks taken from the animal also have been sent off for identification. If any of these are not indigenous to Missouri, they could provide clues about the cat's origin. The mountain lion's pelt will be mounted for display at a nature center.

The last known native cougar was killed in 1927 in Missouri's Bootheel region. The first recent sighting was in 1994, when a man shot an adult female cougar in Carter County.

Mountain lions were videotaped in Reynolds County in 1996, in Christian County in 1997 and in Lewis County in 2000. In 1999, a rabbit hunter saw a mountain lion in Texas County, and the discovery of fresh cougar kills nearby confirmed the sighting. The sixth sighting came last October, when a motorist killed a cougar in Clay County near Kansas City.

Mountain lions are being seen more frequently in neighboring states, as well. Mountain lions used to be rare in South Dakota, but they have a well-established population there today. Nebraskans are seeing them more often, and there have

been verified sightings in Illinois, Wisconsin, Iowa and, most recently, Arkansas. The Missouri and Arkansas river valleys, with their forests and thickets, provide convenient travel corridors from the west.

Missouri probably has a few resident mountain lions now. To date, there is no confirmed evidence of cougar reproduction in Missouri, but if the animals are migrating into Missouri, that could happen.

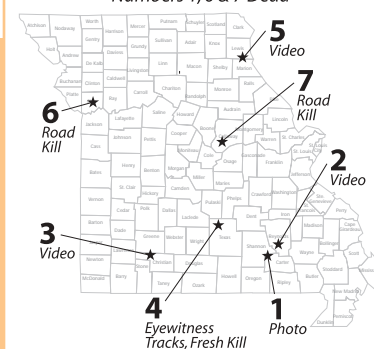
The Conservation Department isn't doing anything to encourage mountain lions returning to Missouri. Their resurgence is partly a result of Missouri's success in restoring deer, which are cougars' primary food.

Mountain lions are protected by law, but it is legal to kill mountain lions or other wildlife that threaten people, livestock or pets. Cougar attacks on people are rare. They are wary of humans and normally stay away from areas frequented by people. It's natural to wonder if you should be afraid of mountain lions, but it's important to keep such worries in perspective. More people are killed by bee stings every year in the United States than have been killed by mountain lions in the past 100 years. Lightning strikes and dog attacks are much more serious concerns.

Missourians who think they see mountain lions are encouraged to contact their local conservation agent.

Missouri Confirmed Mountain Lions

Numbers 1, 6 & 7 Dead



Cliff White

Habitat Hint - Native landscape advice for farms, homes & small acreages

Three new publications help property owners save time and money while enhancing Missouri's biological diversity. "Using Natives on Your Farm," "Natives for Your Home" and "Natives for Your Small Acreage" show how to improve agricultural efficiency, add color to your home and enhance wildlife habitat on your land.

Because native plants are naturally adapted to Missouri's climate and soils, planting them saves effort and money in the long run. To order the new landscape guides, call 573/522-4115, ext. 3630, or visit www.grownative.org.

USDA lifts ban on import of trophies

The U.S. Department of Agriculture (USDA) has lifted a ban on hunters bringing parts of deer, elk, moose and other ruminant animals back to the United States from Canadian hunts.

Federal officials imposed the ban earlier this year after a single cow in Alberta tested positive for bovine spongiform encephalopathy, also known as "mad cow disease." To reduce the risk of the disease entering the United States, the USDA banned the importation of any ruminant parts, including hides, heads and antlers. The agency later allowed hunters to bring cleaned antlers, hides and skull plates back to the United States, but the importation of meat was prohibited.

After reviewing scientific evidence, the USDA concluded that importing trophies posed no measurable risk to public health. Hunters who want to bring wild ruminant meat back from Canada will need a veterinary services special permit and a Canadian export certificate. For more information, call 301/734-3277 or visit www.aphis.usda.gov/lpa/issues/bse/bse.html.

Judge says "No!" to litter

Saline County Associate Circuit Judge James T. "Tut" Bellamy doesn't appreciate people turning his county's roads into trash dumps, as a recent case in his court proves. Bellamy ordered 15 people to pay \$750 each in restitution to the Department of Natural Resources for dumping household trash, appliances, construction debris and other material along a county road. He also ordered them to help clean up the illegal dump.

Fight to the finish

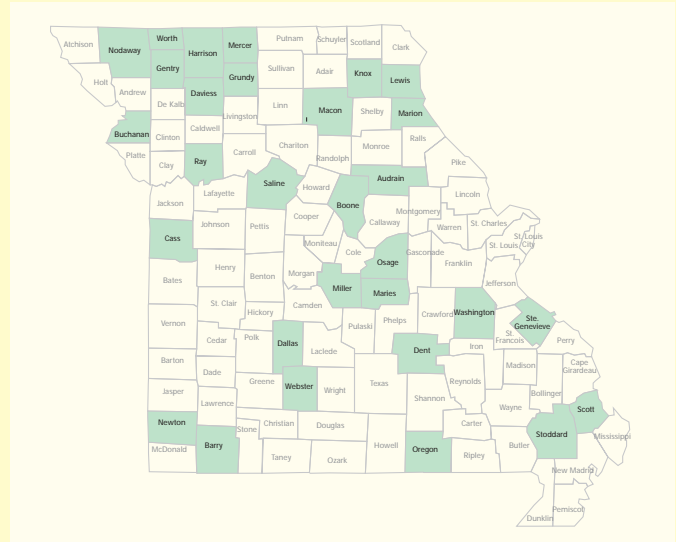
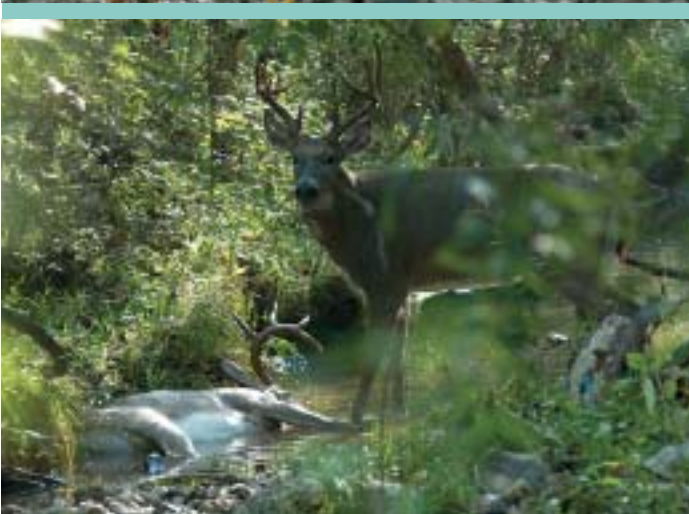
A dramatic fight between two whitetail bucks on the grounds of the Conservation Department's central office complex ended in the death of one of the combatants.

The two deer battled in a forested area near a creek bed just yards from the Department's publications warehouse. Several Department employees, including photographer Jim Rathert, witnessed the fight for dominance.

After extensive sparring, the slightly smaller of the two bucks in the battle managed to knock the larger buck off balance. The buck fell into a section of the creek where the water was a few inches deep. The smaller buck kept its antlers on the downed buck's head, holding it under water. Even after its opponent had drowned, the winning animal continued to prod it with its antlers.

Male deer compete with one another during the rut, which generally begins sometime in September. Most competitions end harmlessly, usually with the animal with the larger body and more developed antlers "winning out" by intimidation. Sometimes, however, the fighting can become intense, leading to serious injuries or, as in this battle, death.

Jim Rathert photographs



CWD sampling will be faster this year

Hunters who volunteer to have their deer tested for chronic wasting disease (CWD) will find the procedure faster this year, and they can keep their deer heads.

The first round of testing, conducted in 30 randomly selected counties during the 2002 November firearms deer season, showed no sign of CWD in Missouri. Testing was voluntary and involved removing deer heads at the check stations. The heads were transported to a central location, where workers removed samples of brain tissue for testing.

Like last year, this year's testing will be strictly voluntary. This time, however, workers will only cut a hole in the neck of deer carcasses and remove lymph nodes for testing.

Though the new procedure is faster and less damaging to trophies, it will leave a hole in the hide that will make trophy mounting difficult. Hunters who volunteer to have their deer tested may have to find another cape to use with their deer's antlers.

Landowners get help improving environment

Three northeast Missouri soil and water districts are getting funds to improve water quality.

Citizen groups in Shelby, Knox and Macon counties developed watershed management plans which they submitted to the Missouri Department of Natural Resources for funding Special Area Land Treatment (SALT) projects. Three seven-year projects will provide farmers \$2.1 million to implement production practices that benefit the environment.

Local groups used information from the University of Missouri Extension Service to determine how changes in land management could improve water quality. In Macon County, they developed a watershed management plan to reduce the amount of soil, pesticides, nutrients and bacteria that flow into Long Branch Lake.

Local decision making is a key element in these projects. By having local input and leadership, the SALT projects offer landowners the chance to improve local environmental quality while keeping farms profitable.

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Conservation workers earn professional accolades

Two Conservation Department professionals recently received honors from professional groups.

Resource Science Division Administrator Dale Humburg of Columbia recently received the Mississippi Flyway Council's Don Rusch Waterfowl Conservation Award for his contributions to duck and goose conservation over the past 25 years. Those contributions include serving as Eastern Prairie Population Canada Goose Committee Chair, outstanding work on the Adaptive Harvest Management Working Group and numerous presentations to the flyway council. Council officials called Humburg "the consummate state waterfowl biologist."

Forestry District Supervisor Michael Anderson of Perryville received the Society of American Foresters Presidential Field Forester Award in October. The award recognizes foresters who have displayed uncommon talent and innovative methods in forest management.

Anderson, who has worked for the Conservation Department for 26 years and has been an SAF member for 28 years, has provided forest management help to private landowners, managed forest land on conservation areas, and trained rural fire department volunteers. He is particularly known for his expertise about regenerating eastern oak-hickory forests and incorporating wildlife habitat, aesthetics and recreation in forest management.



Dale Humburg



Michael Anderson



A year for big and unusual fish

2003 has been a year for big and unusual fish. In April, Scott Brown of Odessa tied the state pole-and-line record for flat-head catfish by catching a 77-pound, 8-ounce specimen at Montrose Lake in Henry County.

On July 10, Amber Schlatt, 11, of Paris caught a 15-pound, 13-ounce brown trout at Bennett Spring State Park. Three days later, Jeff Tiefenauer of Desloge caught a 16-pound, 15-ounce brown trout at Bennett Spring. Tiefenauer speculated that hot weather and low flow in the Niangua River prompted the behemoth browns to swim up the spring branch into the state park.

Although these fish fell far short of the 26-pound, 13-ounce state record caught from Bull Shoals Lake in November 1997, they're still a lot bigger than what one normally expects to catch at a trout park.

In addition to those catches, Betsy Wittenberg of Camdenton caught a 18.8-pound walleye last August in Ha Ha Tonka Cove at Lake of the Ozarks. That's a bigger fish than you're likely to catch in some of the world's best walleye lakes. The state-record pole-and-line walleye was a 21-pound, 1-ounce fish caught at Bull Shoals Lake in March 1988.

At Longview Lake in Jackson County, Vernon Anderson caught what he thought was a piranha. It turned out to be a pacu, a vegetarian piranha look-alike. Like piranhas, pacus cannot survive Missouri winters, so any companions the fish had at Longview Lake won't be around next spring.

Eagle Days scheduled

Are you ready for a winter outing to see dozens or even hundreds of bald eagles? Check out an Eagle Days event.

Telescopes and interpretive programs are provided at each site, and some have indoor programs and food vendors. Call the telephone number provided for detailed information about each event.

- ☞ Dec. 6-7, Mound City, 816/271-3100
- ☞ Jan. 3-4, Lake Ozark, 573/526-5544
- ☞ Jan. 10-11, Smithville, 816/532-0174
- ☞ Jan. 17-18, St. Louis, 314/231-3803
- ☞ Jan. 17-18, Springfield, 417/888-4237
- ☞ Jan. 24, Schell City, 417/87605226
- ☞ Jan. 24-25, Clarksville, 660/785-2420



Photo certificates recognize first deer or turkey

Did a youngster you know bag his or her first turkey during the spring or fall hunting season? Do you have a new deer hunter in the family? If so, remember the First Deer and First Turkey certificates available from the Conservation Department.

All you have to do is send in a snapshot of your proud hunter, age 15 or younger, with his or her deer or turkey. We will incorporate the photo into the certificate suitable for framing. You can download an application from <www.mdc.state.mo.us> by clicking on key word "first-turkey" or "first-deer." Or contact First Deer/Turkey Certificate, Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102-0180, phone 573/522-4115, ext. 3293.



Cliff White

Outdoor skills programs reach out to kids with special needs

Kids and conservation are a natural fit, and the Conservation Department is working to ensure that children with special needs have access to conservation programs, too. One example is an outdoor skills camp held at Lake of the Ozarks State Park last summer.

For two days, children from all over the state with hearing impairments enjoyed hands-on outdoor activities ranging from fishing, archery and air-gun shooting to pitching a tent and an old-fashioned fish fry. G. Fred Asbell, an internationally renowned archer and editor of *Bow Hunter* magazine, provided bow and arrow instruction with the help of the United Bowhunters of Missouri and the Compton Traditional Bowhunters.

The camp will be offered again next year. For more information, contact Tisha Holden, 573/346-2210, ext. 222; Eric Swainston at 573/392-1987 or Dennis Garrison at 417/646-8331.

Sometimes special needs are emotional, not physical. Conservation Department personnel also are involved in ensuring outdoor recreational opportunities for the families of law enforcement officers who died in the line of duty through the Concerns of Police Survivors (COPS) program. Last August, Lake of the Ozarks State Park also hosted the COPS Kids Camp for youths age 6 through 14. Canoeing, fishing and identifying animal calls were among the activities.

COPS was founded in 1984 to help families of deceased police officers. The Conservation Department's goal is to ensure that such families get to learn outdoor skills that the missing family member might have taught them. Both children and parents also have the opportunity to talk with professional grief counselors during the camp.

Some counties are deer-hunting sleepers

What county has the best deer hunting in Missouri? The answer can be found in deer harvest numbers, but digging it out requires a little work with a calculator.

The easy way to find a good hunting area is to pick a county where lots of deer were killed last year. By this measure, the top 10 counties in the state are Benton (5,697), Pike (5,673), Callaway (5,541), St. Clair (5,236), Boone (5,180), Franklin (4,540), Macon (4,411), Osage (4,258), Henry (4,151), and Texas (4,128).

The trouble with this method is that it doesn't take into account the size of counties. For instance, Texas County is about three times as large as Worth County, but when you calculate the number of deer killed per square mile dur-

ing the 2002 hunting season, Worth County comes out on top with 3.557 per square mile compared to Texas County's 3.503.

In this light, the top counties are Pike (8,255), Hickory (7,736), Howard (7,658), Benton (7,577), Boone (7,502), St. Clair (7,464), Cedar (7,023), Osage (6,987), Gasconade (6,685), and Montgomery (6,545). Statewide, the average county deer kill per square mile was 3.976.

If antlers are your thing, the Missouri Show-Me Big Bucks Club has information that might be of interest to you. Eleven counties have produced more than 100 deer each that qualified for the club's record book. Those are Saline (183), Callaway (148), Putnam (145), Chariton (142), Cooper (138), Adair (133), Harrison (119), Macon (114), Franklin (107), Gasconade (106) and Boone (103).

NEWS & ALMANAC

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Outdoor Calendar

HUNTING	OPEN	CLOSE
Coyotes	5/12/03	3/31/04
Deer, Firearms, Youth Season	11/1/03 <i>Resident Only</i>	11/2/03
Deer, Firearms	11/15/03 12/13/03	11/25/03 12/21/03
December season open only in units 1-27, 33-38, 58 & 59— <i>Antlerless Only</i>		
Deer, Muzzleloader	11/28/03	12/7/03
Deer/Turkey, Archery	10/1/03 11/26/03	11/14/03 1/15/04
Squirrels	5/24/03	1/15/04
Pheasants		
North Zone	11/1/03	1/15/04
Southeast Zone	12/1/03	12/12/03
Quail	11/1/03	1/15/04
Rabbits	10/1/03	2/15/04
Ruffed Grouse	10/15/03	1/15/04
Furbearers	11/20/03	1/20/04
Groundhogs	5/12/03	12/15/03
Doves	9/1/03	11/9/03
Sora & Virginia Rails	9/1/03	11/9/03
Common Snipe	9/1/03	12/16/03
Woodcock	10/15/03	11/28/03
Crows	11/1/03	3/3/04

FISHING

Black Bass (most southern streams)	5/24/03	2/29/04
Trout Parks	3/1/04	10/31/04
Bullfrog & Green Frog	Sunset 6/30/04	Midnight 10/31/04
Nongame Fish Stream Giggling	9/15/03	1/31/04

TRAPPING

Beaver	11/20/03	3/31/04
Coyote	11/20/03	2/20/04
Otters & Muskrats	11/20/03	Varies
see regulations for other zones, limits and dates		
Other Furbearers	11/20/03	1/20/04

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Information*, *Waterfowl Hunting Digest* and the *Migratory Bird Digest*. To find this information on our Web site go to <http://www.conservation.state.mo.us/regs/>.

The Conservation Department's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800/392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to <http://www.wildlifelicense.com/mo/>.



Cliff White

Tree planting advice available online

Missourians who lost trees during violent weather last spring and summer can get advice about replacing those trees online at several web sites.

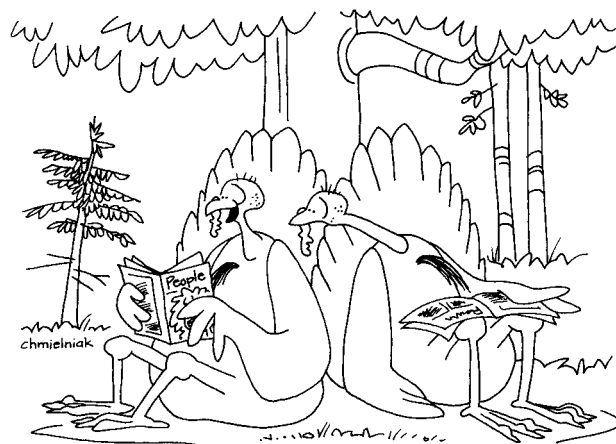
✎ www.treelink.org/linx/?navSubCatRef=46 and www.arborday.org have general information about tree care.

✎ www.americanforests.org/resources/howtoplanttrees/ has detailed instructions on where and how to plant trees.

✎ www.RightTreeRightPlace.com has a detailed video showing how to avoid a common mistake that causes trees to die prematurely.

✎ www.conservation.state.mo.us/forest/library/ has a list of Conservation Department publications related to tree planting and maintenance. For example, "Missouri Urban Trees" is designed to help readers make good tree selections. This and other publications can be ordered online or from Conservation Department offices statewide.

The tree planting decisions you make now will be with you a long time. These sites help you get the most for your time and money.



"Here's a weird coincidence. Only the adult males have beards. The females and immatures don't."



Program Schedule

Television the way Nature intended!

Broadcast Stations

Columbia KOMU (Ch 8 NBC) / Sundays 11:00 a.m.

Hannibal KHQA (Ch 7 CBS) / Weekends, check local listing for times

Joplin KOZJ (Ch 26 PBS) / Saturdays 2:00 p.m.

Kansas City KCPT (Ch 19 PBS) / Sundays 7:00 a.m.

Kirkville KTVO (Ch 3 ABC) / Saturdays 5:00 a.m.

St. Joseph KQTV (Ch 2 ABC) / Weekends, check local listings for times

St. Louis KSDK (Ch 5 NBC) / Sundays, 4:30 a.m.

Springfield KOZK (Ch 21 PBS) / Saturdays 2:00 p.m.

Warrensburg KMOS (Ch 6 PBS) / Sundays 6:30 p.m.

Cable Stations

Branson Vacation Channel / Fri., Sat. 8:00 p.m.

Brentwood Brentwood City TV / Daily, check local listing for times

Cape Girardeau Charter Cable Ed. Ch. 23 / Thursdays 6:00 p.m.

Chillicothe Time Warner Cable Channel 6 / Wednesdays 7:00 p.m.

Hillsboro JCTV / Mondays 12 p.m. & 6 p.m.

Independence City 7 / Thurs. 2 p.m., Sat. 10 a.m. & Sundays 8 p.m.

Joplin KGCS / Sundays 6 p.m.

Mexico Mex-TV / Fridays 6:30 p.m. & Saturdays 6:30 p.m.

Noel TTV / Fridays 4:30 p.m.

O'Fallon City of O'Fallon Cable / Wednesdays 6:30 p.m.

Parkville City of Parkville / First and third Tuesdays of the month 6:30 p.m.

Perryville PVTv / Mondays 6 p.m.

Poplar Bluff City Cable-Channel 2 / Tues. 7:30 p.m. & Saturdays 10:00 a.m.

Raymore Govt. Access-Channel 7 / Various, check local listings for times

Raytown City of Raytown Cable / Wed. 10:00 a.m. & Saturdays 8:00 p.m.

St. Charles City of St. Charles-Ch 20 / Tues. 5:00 p.m. and Wed. 10:00 a.m.

St. Louis Charter Communications / Saturdays 10:30 a.m.

St. Louis City TV 10 / Mondays 11:30 a.m., Wednesdays 3:30 p.m.

St. Louis Cooperating School Districts / Wednesdays 9 a.m.

St. Louis DHTV-21 / Mondays 10:30 a.m.

St. Louis KPTN-LP/TV58 / Thursdays 10:00 a.m.

St. Peters City of St. Peters Cable / Various, check local listings for times

Ste. Genevieve Public TV / Fridays 1 p.m., 6 p.m. & 12 midnight

Springfield KBLE36 / Nine times a week, check local listing for times

Sullivan Fidelity Cable-Channel 6 / Wed. 11:00 a.m. and Fri. 7:00 p.m.

Union TRC-TV7 / Tuesdays 3:00 p.m.

West Plains OCTV / Mondays 6:30 p.m.

Meet our Contributors



Joe Bachant recently retired from the Conservation Department. During his 30 year tour of duty, he worked on numerous water resource and land use issues, and was one of several founders of the Missouri Stream Team Program. Joe still works part-time at the Department, but he and his wife, Fran, also travel to the east and west coasts to visit their children.

Private Land Conservationist **David Hoover** has worked for the Conservation Department since 1998. He lives in Queen City and enjoys working on his small farm and hunting and fishing with his wife and two daughters. His professional interests include helping landowners improve habitat for upland wildlife and promoting the use of native forages in grazing systems.



Kenneth L. Kieser writes regularly for newspapers and outdoor magazines. He is an active member of the Outdoor Writers Association of America and the Missouri Outdoor Communicators. He says he spent his first 50 years in Missouri. He now lives near Kansas City.

Kathy Love, a writer/editor for the Conservation Department, says she likes to write about people who are making a difference in the conservation of our state's resources. She works on Conservation Department educational publications and says she hopes her work helps improve Missourians' understanding of their forest, fish and wildlife resources.



News Services Coordinator **Jim Low** spends as much time as possible fishing, hunting and just soaking in the grandeur of the Missouri River. His news and magazine writing have earned him many honors, including multiple Outdoor Ethics writing awards from the Izaak Walton League of America and the National Wild Turkey Federation's 2003 Communicator of the Year Award.



Northern Mockingbird (*Mimus polyglottos*)

A northern mockingbird perches on a sumac while guarding a fruit-laden holly tree. Mockingbirds are extremely territorial. During the spring and summer breeding season they defend courtship and nesting areas. In fall and winter they protect areas of abundant food. — *Jim Rathert*